

# **Industry Safety and Constructability Review During Design I-69 from I-96 to Airport Road JN 125869, 129982 and 204666**

## **Executive Summary:**

The goal of the Pilot Project is to test the waters on Industry review of maintaining traffic and staging plans early in the development process. The WZSTF sub-team (Action Team #3) has identified this review as an opportunity to obtain industry perspective on the safety and constructability of a proposed project.

To provide an open and equal opportunity for all potential bidders to review, the pilot will be placed on the Innovative Contracting Web Site (Link: [https://www.michigan.gov/mdot/0,1607,7-151-9625\\_21539\\_53226---,00.html](https://www.michigan.gov/mdot/0,1607,7-151-9625_21539_53226---,00.html)). MDOT will also post a contractor announcement on the Bid Letting webpage as well as an announcement on MITA's website. This will be reviewed by MDOT based on feedback from the industry. MDOT will provide a compilation of the number of comments submitted on the pilot for all stakeholder's benefit. This has the potential to improve safety, identify construction challenges and enhance the design during the development process. It is intended for use on projects which have complex staging with high mobility requirements.

## **Disclaimer:**

The following documents are in DRAFT format and are provided for informational purposes only. These documents are subject to further revision and are not to be relied upon for bidding or estimating purposes. Under no circumstances are these documents to be submitted or relied upon as part of a request for additional time or compensation, or in support of any type of claim. MDOT specifically disclaims any liability arising out of the use of these documents for any purpose.

## **Documents:**

- Summary Sheet
- Title Sheet
- Vicinity Sheet
- Staging Typicals
- Detour Routes
- Bridge Summary Sheets
- Stage Construction Plan Sheets
- Profile Sheets

## **Contact:**

All comments must be made by E-mail to the Project Manager by April 10, 2020. E-mails must include I-69 Pilot Project in the E-mail Title, Name of Inquiring Person, Company Name and Phone Number. All comments will be posted on the Innovative Contracting webpage. MDOT will not reply to the provided comments.

- Project Manager – Miranda Spare - SpareM@michigan.gov

# Industry Safety and Constructability Review During Design

## Summary of the I-69 Project

### JN 125869, 129982 and 204666

#### A. Scope of Work

- 5.28 miles of roadway reconstruction (including pavement and subbase) on I-69 from I-96 to Airport Road. This includes reconstruction of the ramps at I-96, Francis Road and Airport Road.
- Includes drainage, guardrail, signing and pavement marking upgrades.
- Bridge rehabilitation work to 13 bridges including epoxy overlays, deck patching, joint replacement, substructure repairs, scour countermeasures, structural steel repairs and painting, pin and hanger replacement, barrier patching and approach work.
- The project design files follow the Project PDF format. Project PDF doesn't include individual sheets for the plan and profile sheets but instead one PDF document for each.
- There are various pavement cross sections to be used on the project.
  - I-69 Mainline  
9" to 9.5" of HMA  
6" Dense Graded Aggregate  
18" Sand Subbase (13" from Approx. STA 361+00 to 409+00 POE)  
12" Stabilized Subgrade from Approx. STA 297+00 to 409+00 POE
  - Ramps  
6.5" of HMA (8.75" I-69 to I-96 Ramps)  
6" Dense Graded Aggregate  
18" Sand Subbase
- Rough Construction Cost Estimate is \$40 million road and \$12 million bridge.
- Anticipated Let Date of January 8, 2021.
- Project to be completed in one construction season.

#### B. Maintaining Traffic (Currently Proposed with 4 Stages)

- Stage 1A – Single lane closures to complete outside shoulder upgrades on WB I-69.
- Stage 1B – Single lane closures to complete median shoulder upgrades and construct temporary crossovers.

- Stage 2 – Maintain two lanes of WB I-69 traffic and one lane of EB I-69 traffic on WB I-69 roadbed by utilizing crossovers to reconstruct EB I-69.
- Stage 3A – Maintain two lanes of WB I-69 traffic and one lane of EB I-69 traffic on EB I-69 roadbed by utilizing crossovers to reconstruct WB I-69.
- Stage 3B – Maintain two lanes of EB I-69 on the EB I-69 roadway and detour WB I-69 to reconstruct WB I-69 at the I-96 interchange.
- Stage 4 – Single lane closures to remove temporary crossovers.

C. Complexities

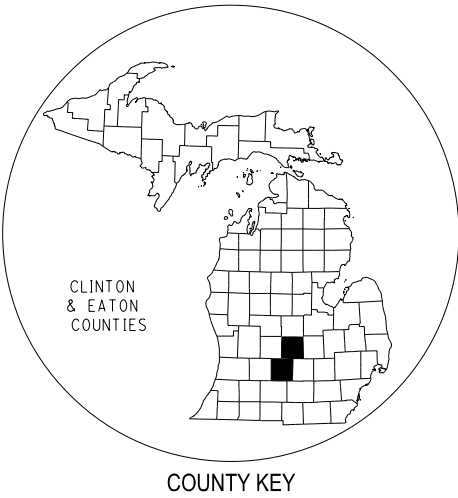
- The Maintenance of Traffic has been developed based upon replacement of the existing underlying base (determined not suitable for part-width construction). The traffic staging has utilized crossovers as well as detours of mainline I-96 via I-496 as the preferred option.

THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION.

PHYSICAL ROAD NUMBER (PR#) & MILEPOST (MP) DATA ARE FROM MICHIGAN GEOGRAPHIC FRAMEWORK VERSION # 16.

MICHIGAN DEPARTMENT OF TRANSPORTATION

ROUTE: I-69  
WATERTOWN, DEWITT & DELTA TOWNSHIPS  
CLINTON & EATON COUNTIES

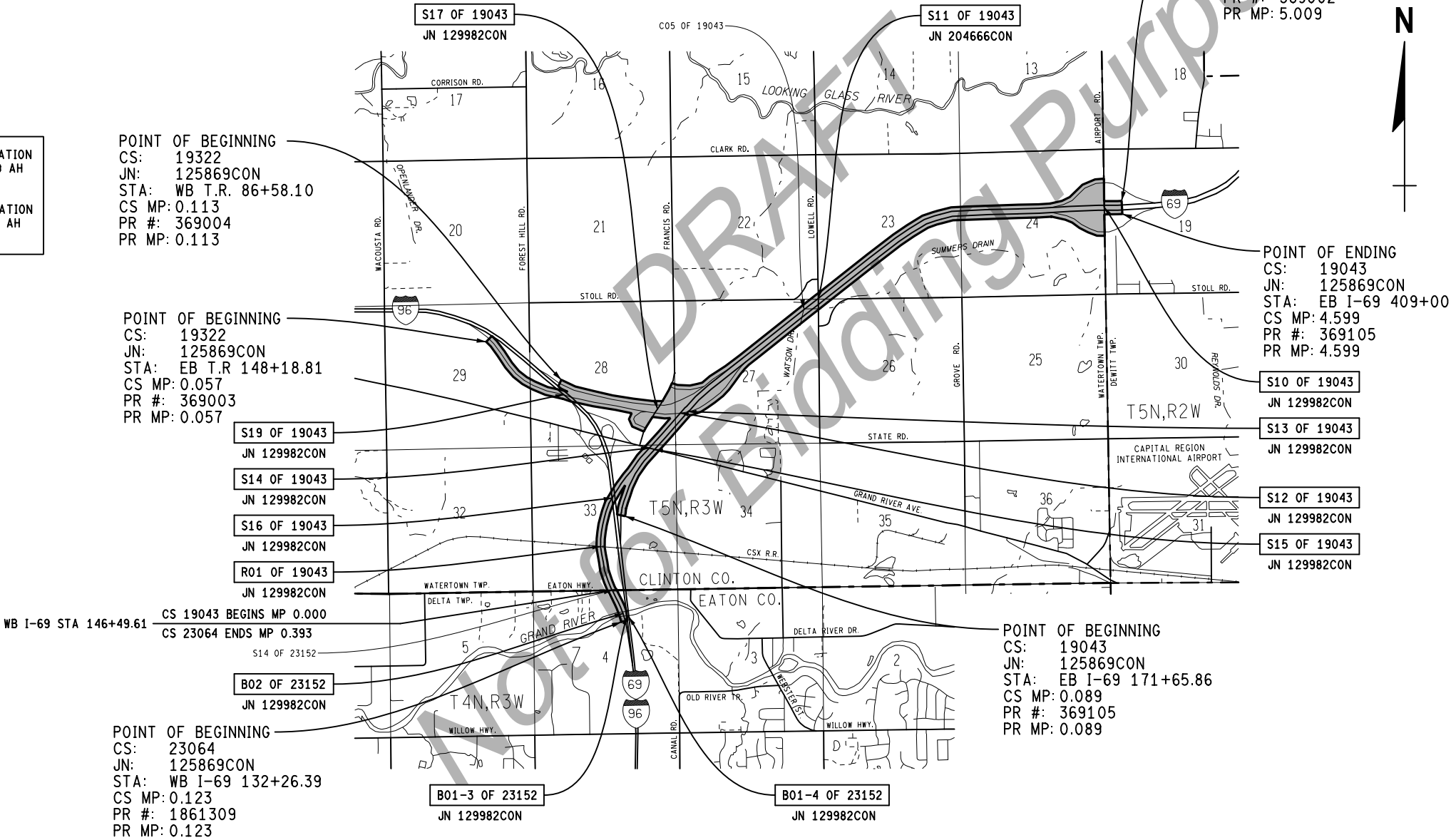


ROAD	YEAR	TRAFFIC DATA			SPEED DATA		LIMITS
		ADT	DHV	COMM	DESIGN	POSTED	
EB I-69	2017	10,150			75	70	I-96 INTERCHANGE
	2037	11,800					
WB I-69	2017	9,850			75	70	I-96 INTERCHANGE
	2037	11,450					
EB & WB I-69	2017	30,450	11%	16.5%	75	70	I-96 TO AIRPORT RD
	2037	35,350	11%	17%			
FRANCIS RD RAMP A	2017	1,725					WB I-69 TO FRANCIS RD
	2037	1,925					
FRANCIS RD RAMP B	2017	1,350					FRANCIS RD TO EB I-69
	2037	1,475					
AIRPORT RD RAMP C	2017	1,500					EB I-69 TO AIRPORT RD
	2037	1,650					
AIRPORT RD RAMP D	2017	1,325					AIRPORT RD TO WB I-69
	2037	1,450					

SECTION	CONTROL SEC	JOB NO.	FEDERAL	
			PROJECT	ITEM
1	19043, 19322, 23064	125869CON		
2	19043, 23152	129982CON		
2	19043	204666CON		

EB I-69 NON-LEGAL (B) ALI STA EQUATION  
STA 350+91.48 BK = STA 350+02.09 AH  
LINE LENGTHENS 89.39'

WB I-69 NON-LEGAL (B) ALI STA EQUATION  
STA 351+60.26 BK = STA 349+64.48 AH  
LINE LENGTHENS 195.78'



THESE PLANS WERE PREPARED FOR THE  
MICHIGAN DEPARTMENT OF TRANSPORTATION  
BY

PAUL CARR, P.E. - PROJECT MANAGER  
DATE  
HNTB MICHIGAN, INC.  
3100 WEST RD, SUITE 110  
EAST LANSING, MI 48823  
(517) 333-3330

APPROVALS

RECOMMENDED FOR APPROVAL BY:

MIRANDA SPARE, P.E. - PROJECT MANAGER  
DATE

JASON EARLY, P.E., P.E. - CONSTRUCTION ENGINEER  
DATE

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
KIRK T. STEUDLE, P.E. - DIRECTOR

APPROVED BY:  
BRADLEY C. WIEFERICH, P.E. - ENGINEER OF DEVELOPMENT  
DATE

MILES: 5.28  
CONTRACT FOR:  
ROADWAY RECONSTRUCTION ALONG I-69, TURNING ROADWAYS, ASSOCIATED  
RAMPS AT FRANCIS RD AND AIRPORT RD, GRADING, DRAINAGE, SIGNING,  
PAVEMENT MARKINGS, & BRIDGE REHABILITATION FOR 13 STRUCTURES.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

HNTB



NO SCALE

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DATE: 01/24/20

DESIGN UNIT: SPARE

TSC: LANSING

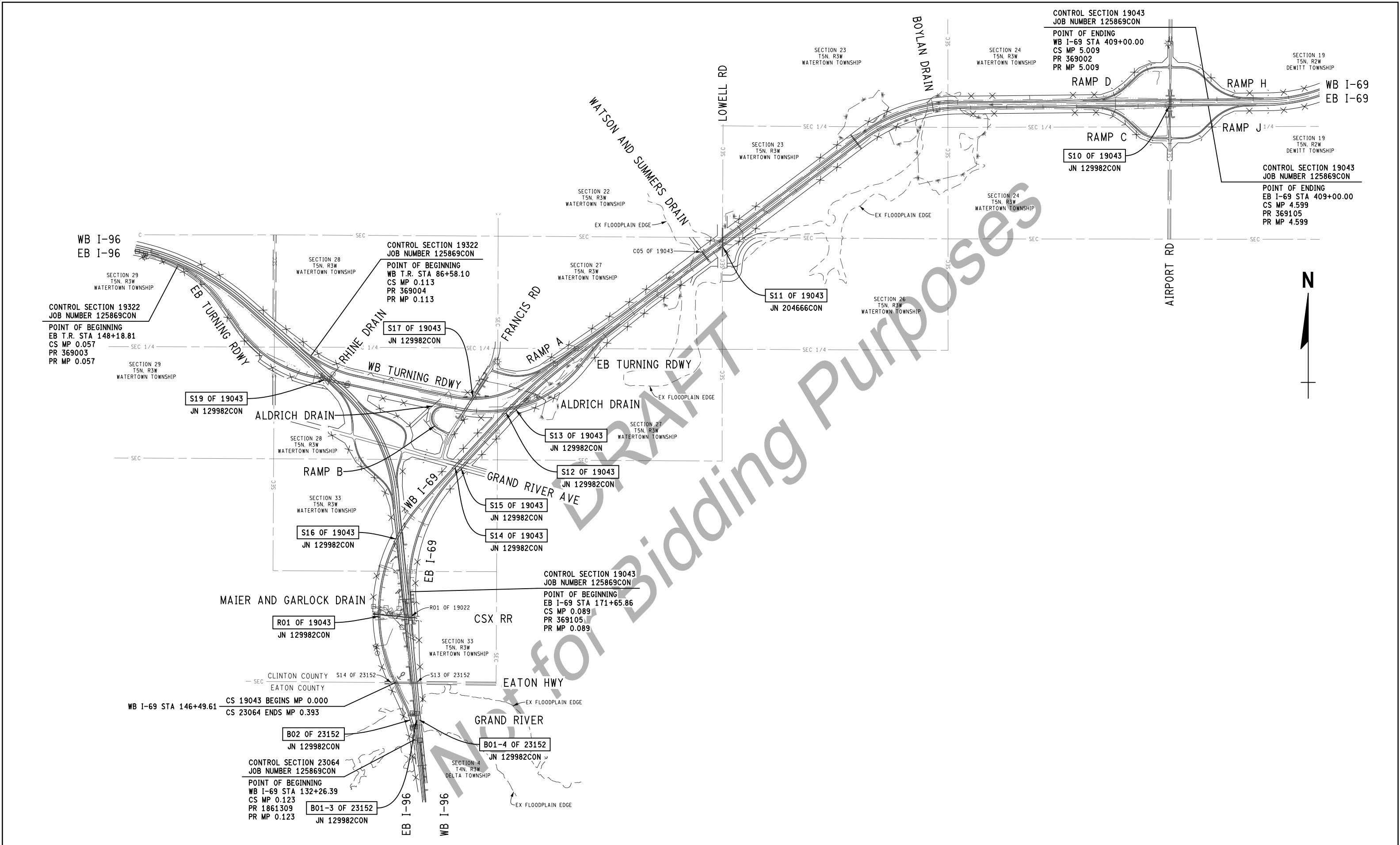
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JN: 125869CON, 129982CON,  
204666CON

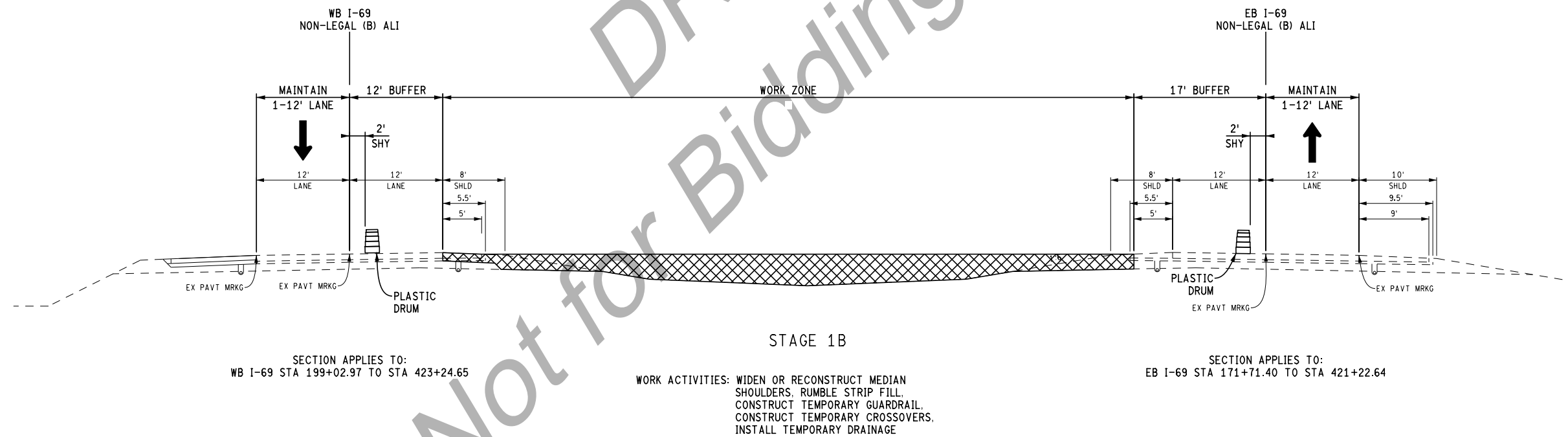
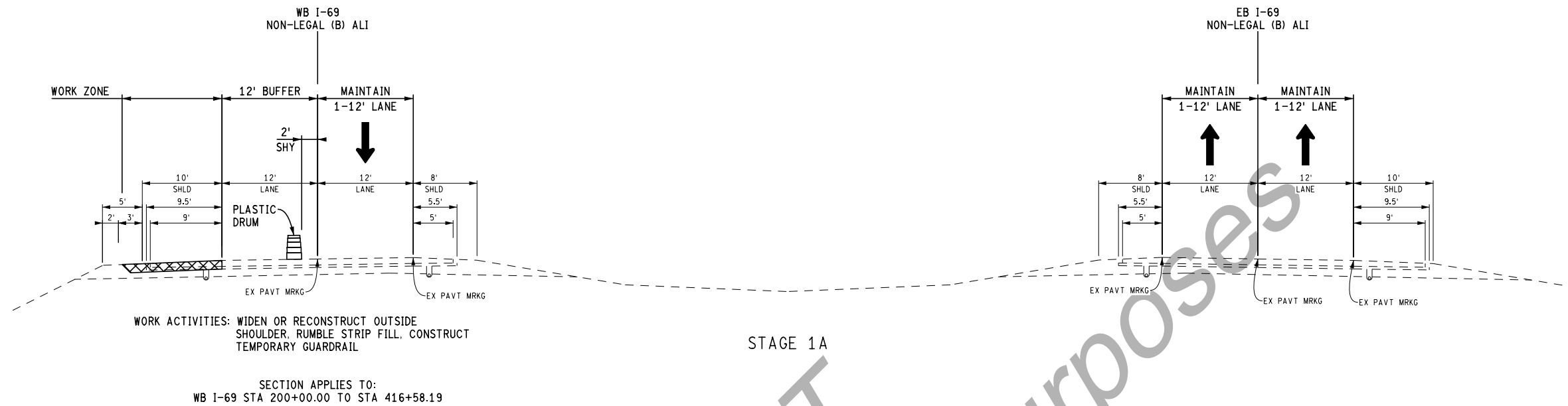
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I-69 RECONSTRUCTION  
I-96 TO AIRPORT RD

DRAWING SHEET  
I-69  
TITLE  
001  
SECT 1

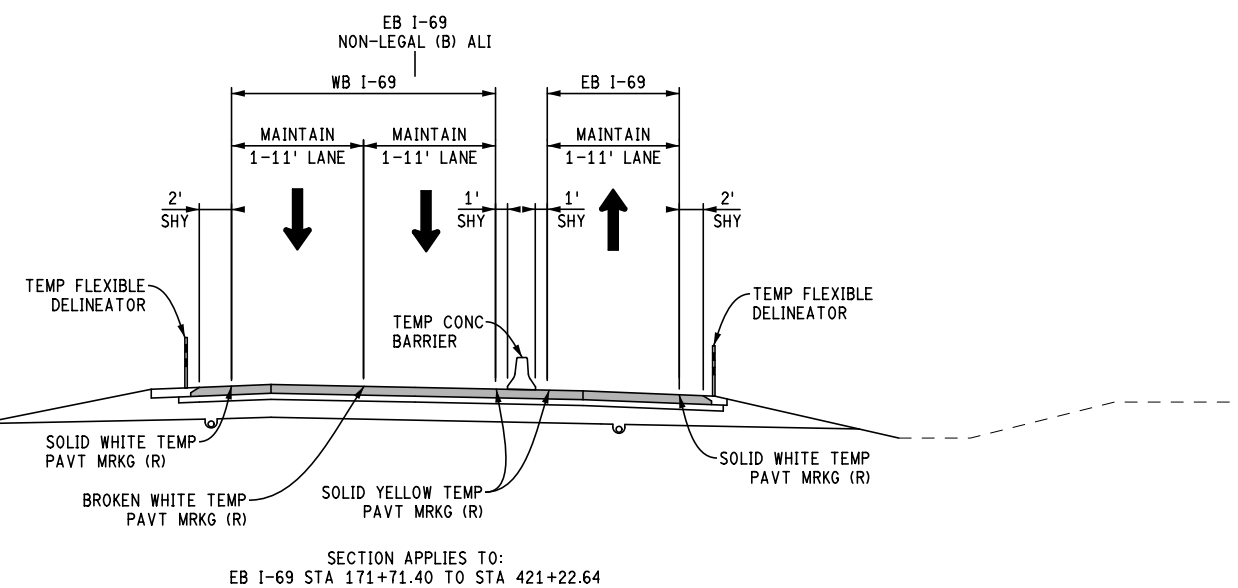
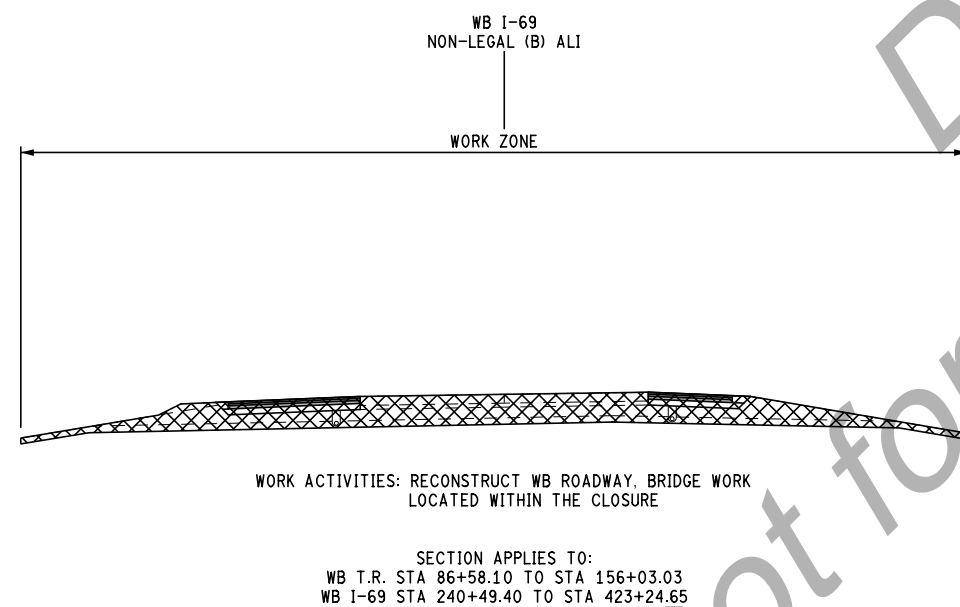
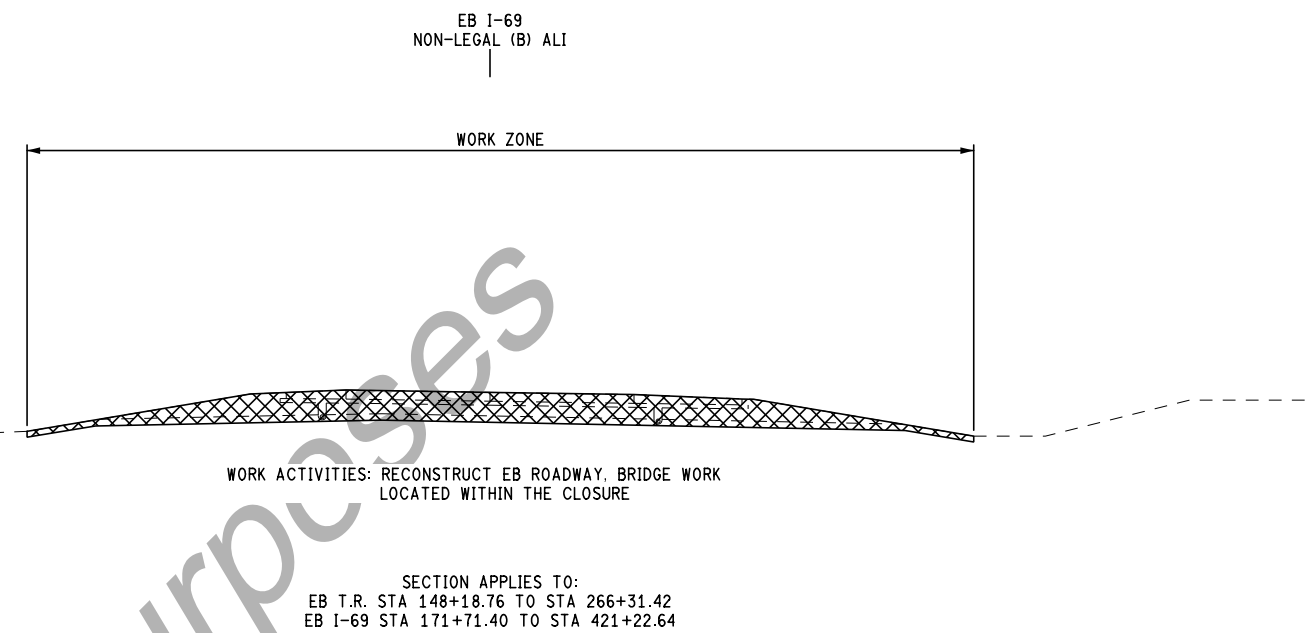
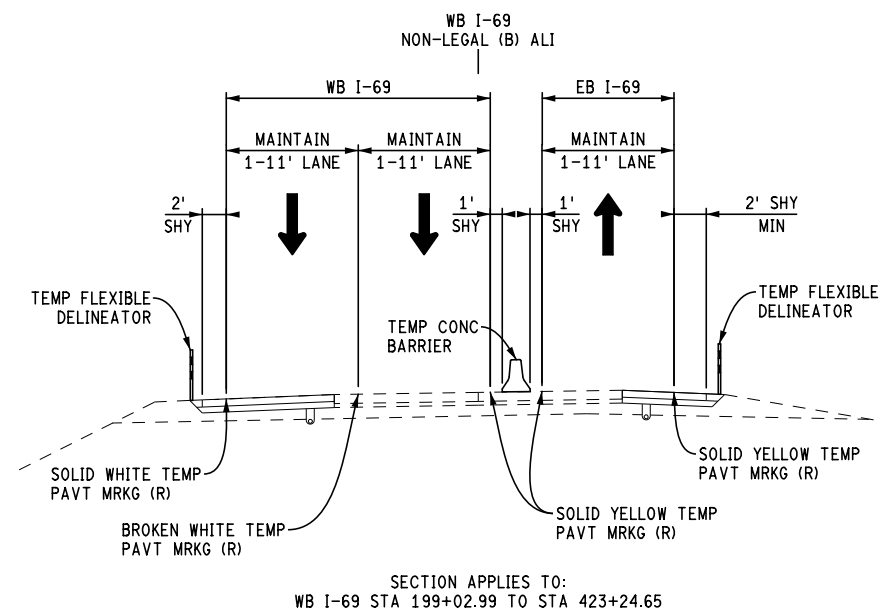


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											FILE: 125869_I69_Proj_Vic.dgn	TSC: LANSING		I-96 TO AIRPORT RD			



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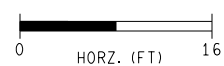
<b>RS</b> Engineering, LLC		<b>MDOT</b> Michigan Department of Transportation		0 16 HORZ. (FT)		DATE: 1/24/20	CS: 19043, 19322, 23064	MAINTAINING TRAFFIC		DRAWING	
FILE: 125869_M0T_Typ_Base		TSC: LANSING		JN: 125869A		I-69 TO AIRPORT RD		1-69		SHEET	
								STAGE 1A & 1B TYPICAL CROSS SECTION		MT TYP 001	



## STAGE 2

STAGE 3A

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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



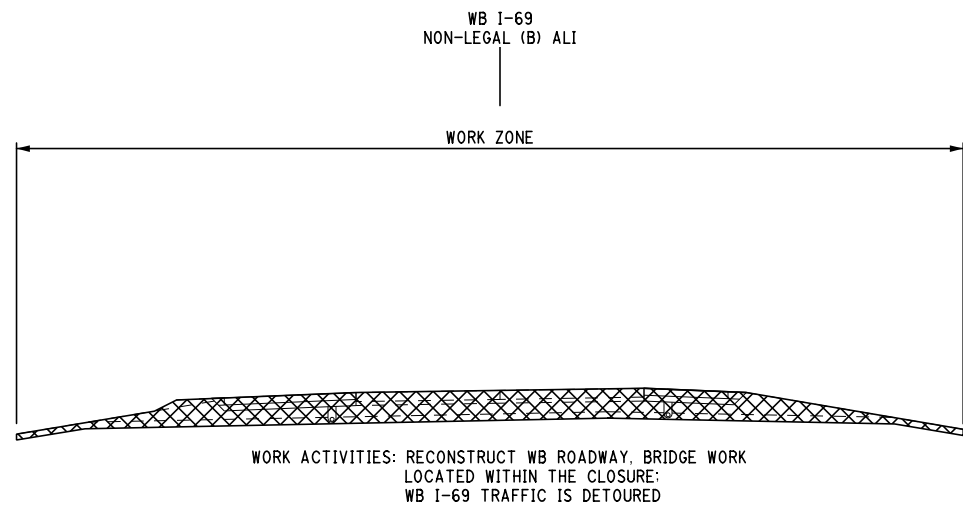
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DATE: 1/24/20
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TSC: LANSING

CS: 19043, 19322, 23064
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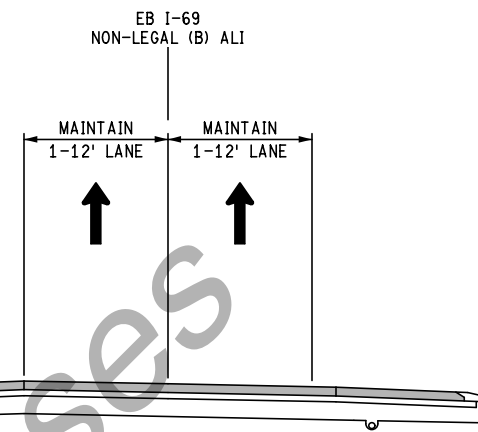
MAINTAINING TRAFFIC
I-69 TO AIRPORT RD
STAGE 2 & 3A TYPICAL CROSS SECTION

DRAWING	SHEET
I-69 MTTYP 002	SECT

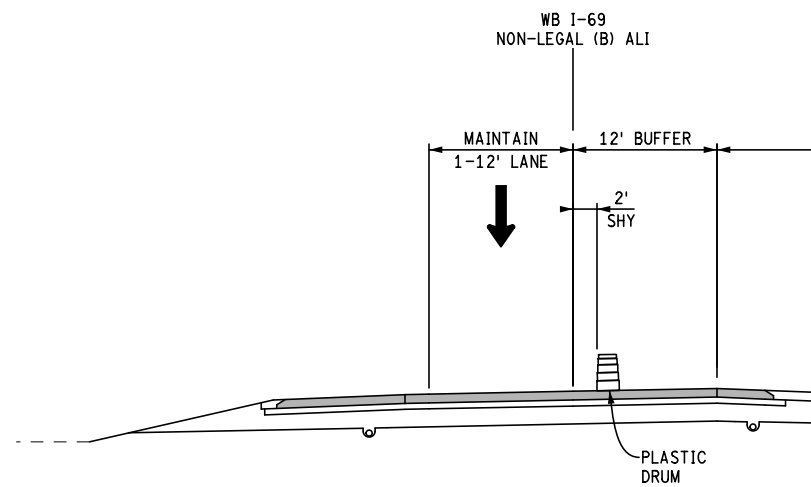


SECTION APPLIES TO:  
WB I-69 STA 132+26.30 TO STA 256+34.89

### STAGE 3B



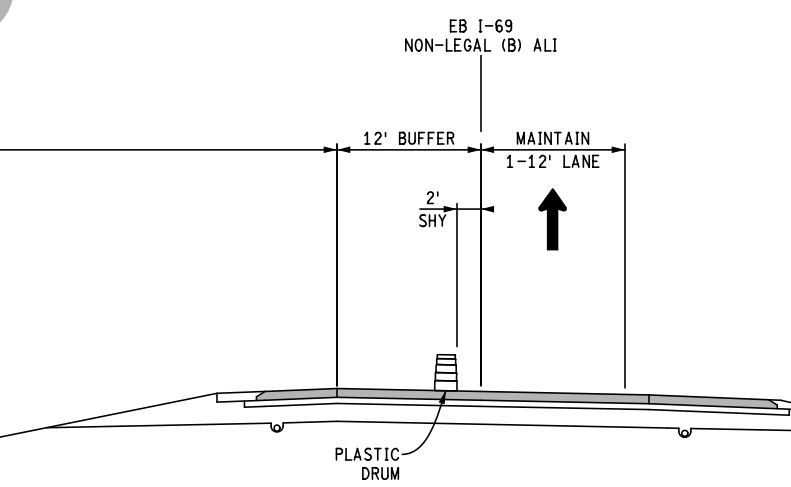
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EB I-69 STA 171+71.40 TO STA 421+22.64





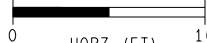
SECTION APPLIES TO:  
WB I-69 STA 199+02.97 TO STA 423+24.65

WORK ACTIVITIES: REMOVAL OF TEMPORARY CROSSEOVERS,  
MEDIAN SHOULDER RECONSTRUCTION,  
TURF ESTABLISHMENT

### STAGE 4

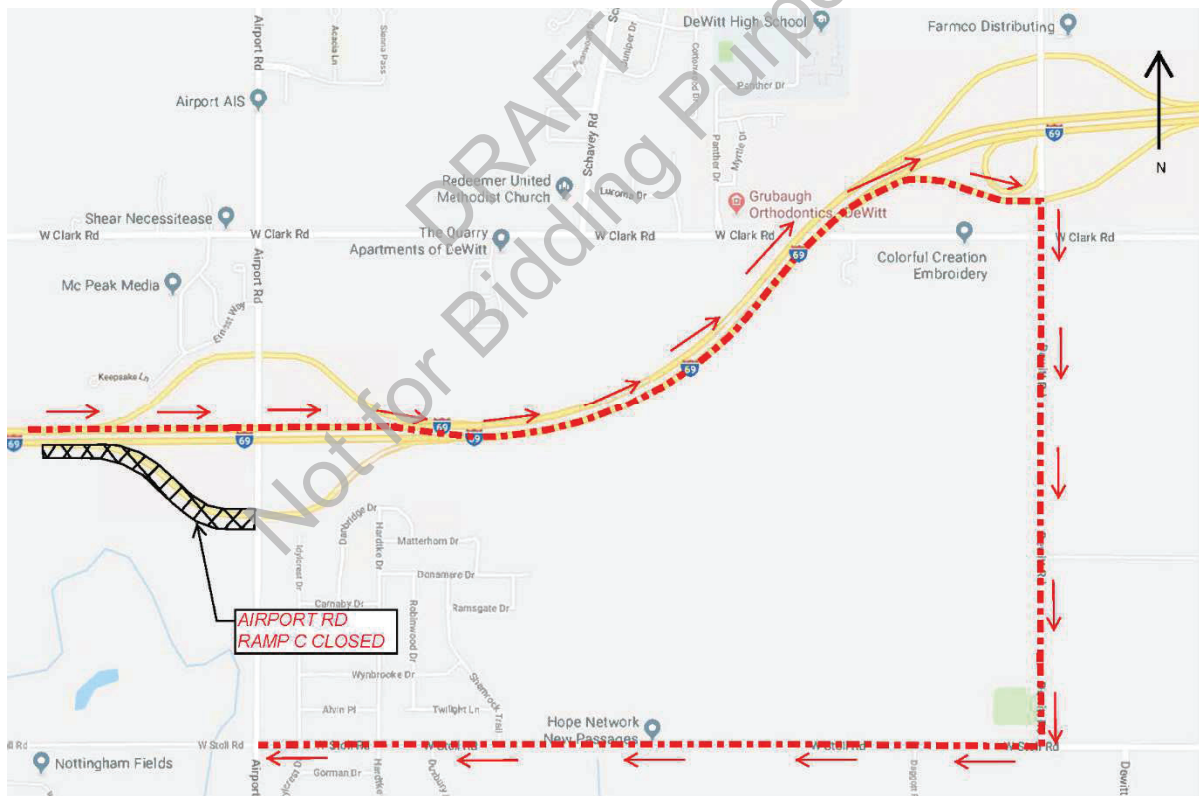


SECTION APPLIES TO:  
EB I-69 STA 171+71.40 TO STA 421+22.64

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )								 Engineering, LLC	 Michigan Department of Transportation			DATE: 1/24/20	CS: 19043, 19322, 23064	MAINTAINING TRAFFIC	DRAWING	SHEET
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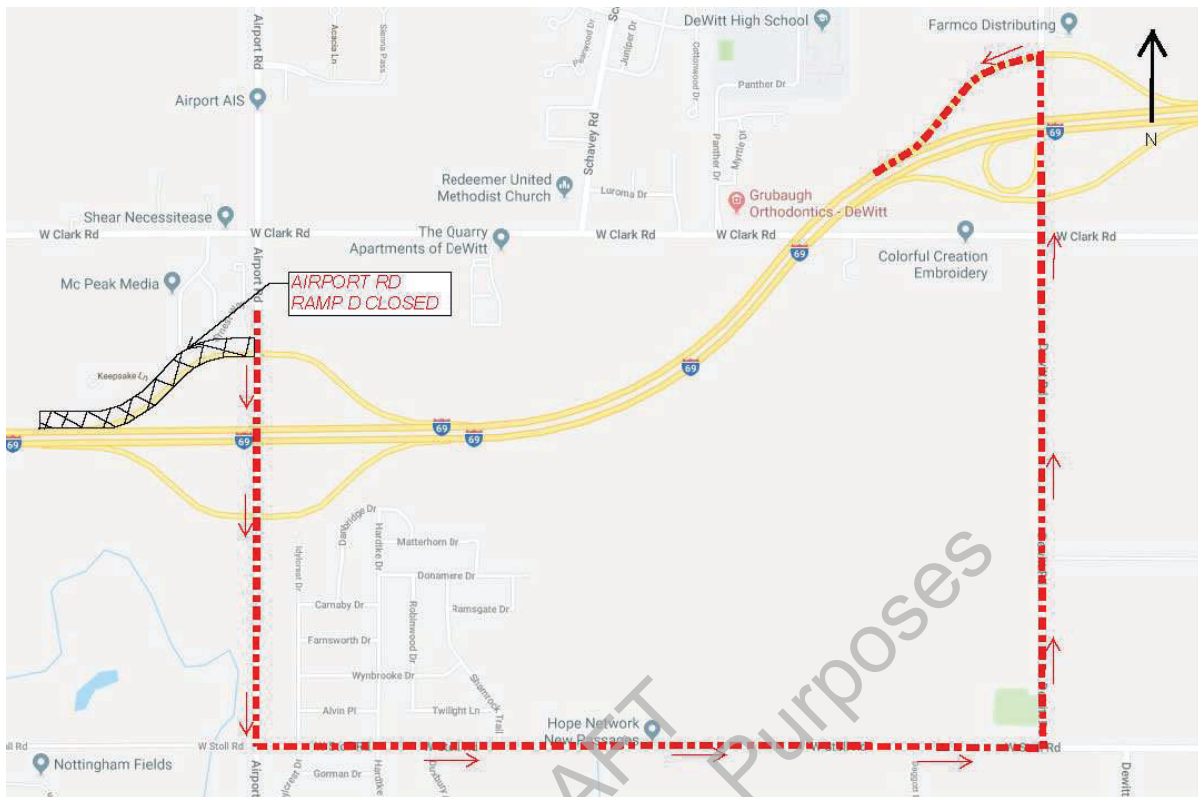


## Stage 2: Proposed Detour Route for Airport Rd Ramp C Closure



Map Data © 2019 Google

### Stage 3a: Proposed Detour Route for Airport Rd Ramp D Closure



Map Data © 2019 Google

### Stage 3a: Proposed Detour Route for Francis Rd Ramp A Closure



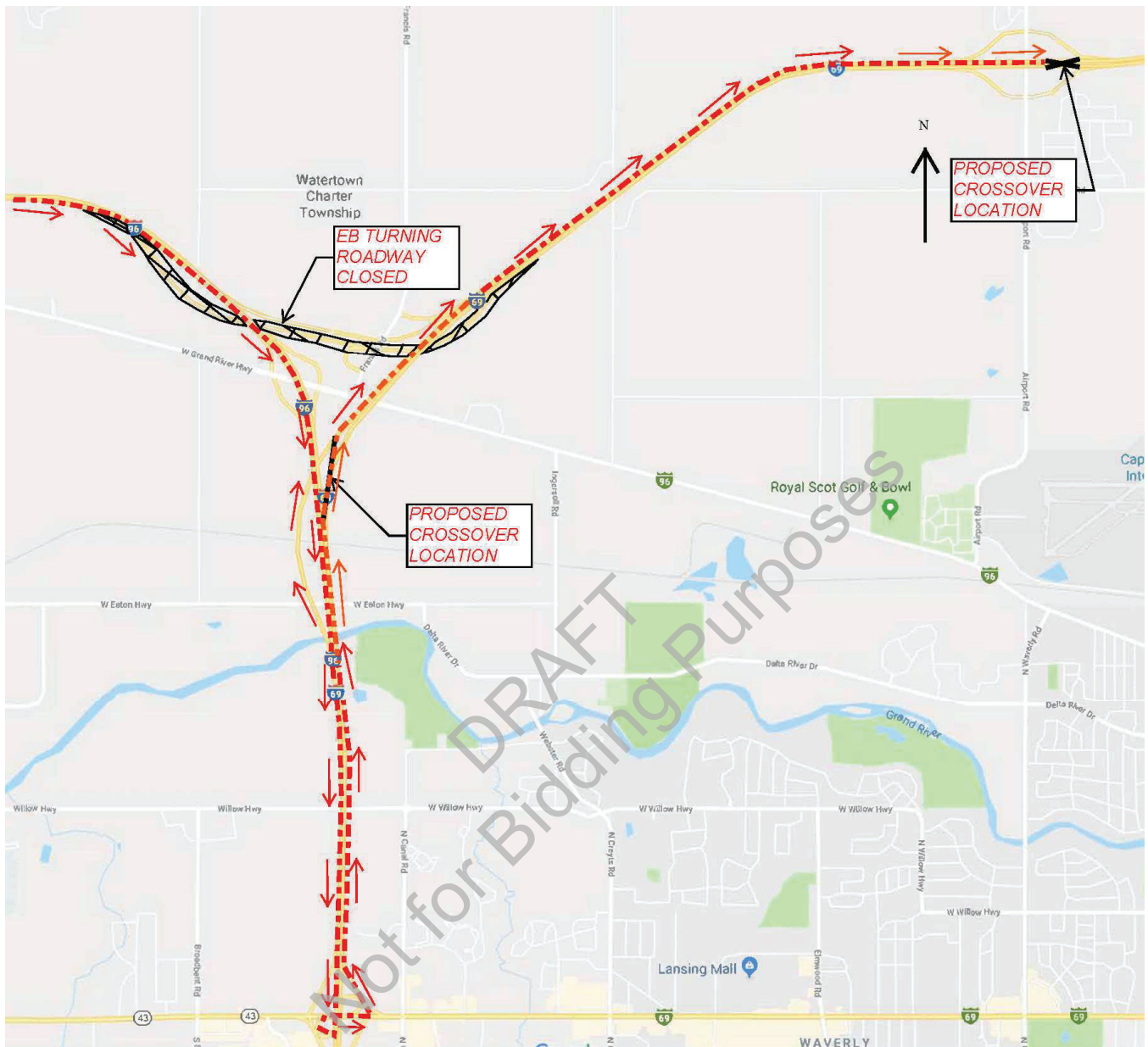
Map Data © 2019 Google

Stage 2: Proposed Detour Route for Francis Rd Ramp B Closure



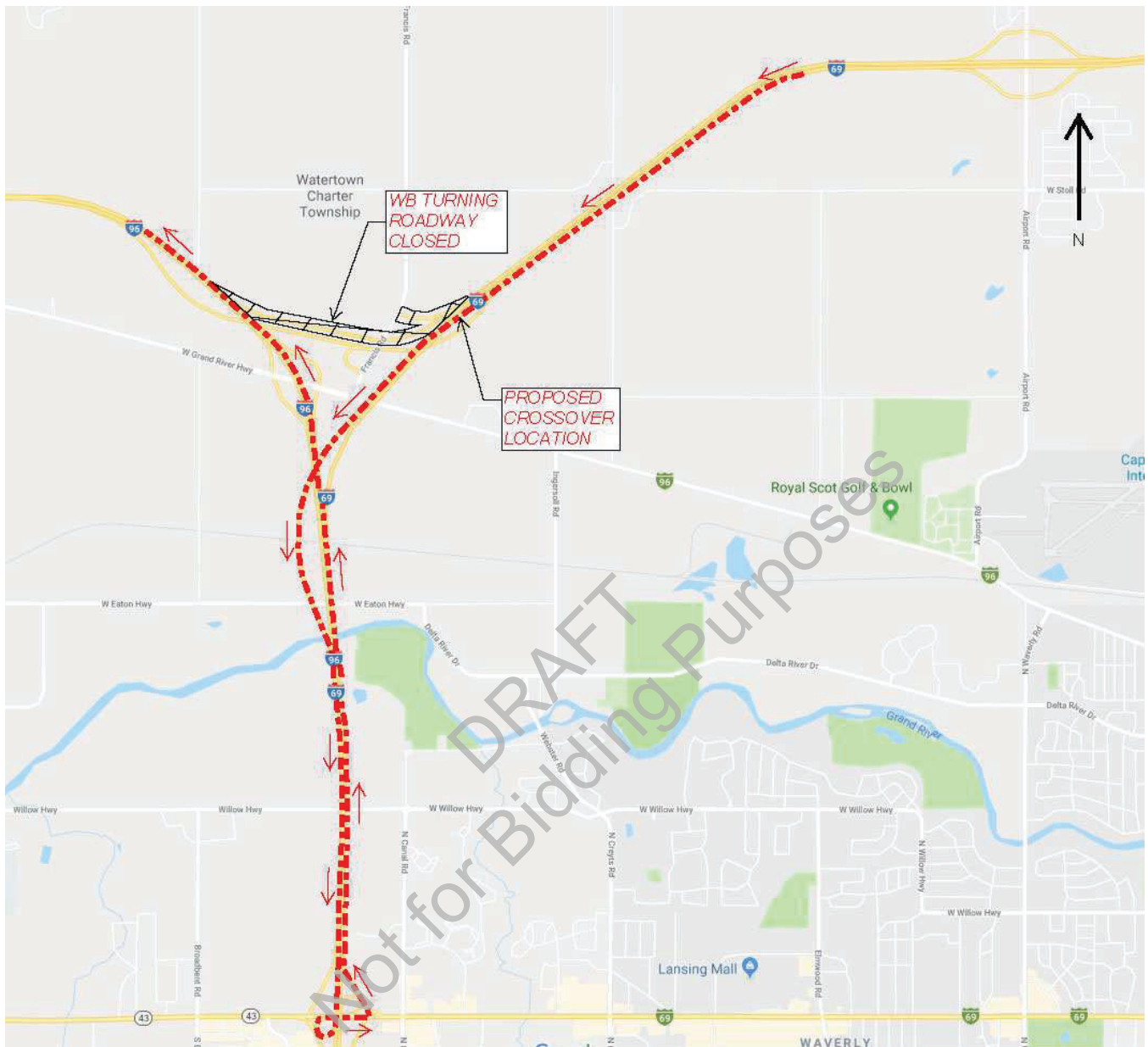
Map Data © 2019 Google

### Stage 3a: Proposed Detour Route for EB Turning Roadway Closure



Map Data © 2019 Google

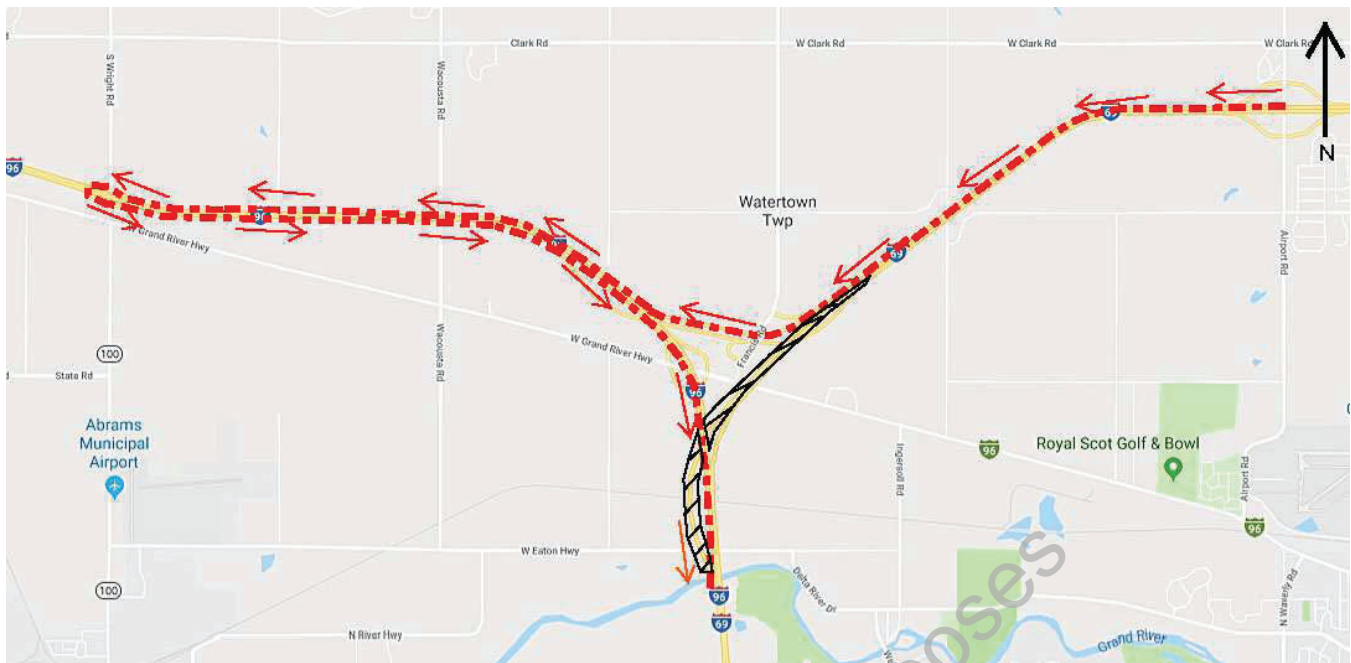
### Stage 3a: Proposed Detour Route for WB Turning Roadway Closure



Map Data © 2019 Google



### Stage 3b: Proposed Detour Route for WB I-69 to EB I-96



### Stage 2: Proposed Detour Route for EB Turning Roadway Closure

